Vale District Bureau of Land Management
Birthday Fire Environmental Assessment
EA No. OR-030-02-030

Decision Record

This decision record documents my decision to select and implement the proposed alternative of the Birthday Fire Emergency Stabilization and Rehabilitation Plan (ESR). This action was analyzed in the attached Environmental Assessment (EA OR-030-02-030).

I have reviewed this ESR plan and its compliance with NEPA, and have determined that the proposed action is tiered to and in conformance with the 1983 Northern Malheur Management Framework Plan, the 1984 Southern Malheur Rangeland Program Summary , the Malheur County Land use Plan, and BLM policy, and that no further environmental analysis is required. Furthermore, the proposed action is in conformance with the applicable federal regulations regarding livestock grazing and wild horse and burros.

This ESR plan includes the following treatments within the Malheur Resource Area, Vale, Oregon: 1) Drill seeding 570 acres with native species; 2) Aerial seeding Wyoming big sagebrush and winterfat on 570 acres; 3) Temporary protective fence; 4) Rest from livestock grazing; 5) Weed control.

Approving Official Date

FINDING OF NO SIGNIFICANT IMPACT: Environmental Assessment No. OR -030-02-030 for the Malheur Field Office adequately analyzes the impacts of the proposed action and a reasonable range of alternatives and indicates there will be no significant adverse effects on the quality of the human environment. Therefore, no Environmental Impact Statement will be prepared.

/s/ Tom Dabbs September 6, 2002
Approving Official Date

Environmental Assessment

I. PURPOSE AND NEED

On July 27, 2002, a lightening-caused fire burned 570 acres of mixed grassland/shrubs in Quartz Mountain Allotment (#0406), at the north end of the Red Butte Winter Range pasture in Township 25 South, Range 43 East W.M., Sections 2, 3, 10, and 11. The fire was declared controlled on July 29, 2002.

The purpose of the emergency fire stabilization and rehabilitation project (ESR) is to:

- reduce the risk of accelerated erosion
- restore the lost upland shrub component necessary for wildlife habitat
- restore the health and vigor of upland grass communities
- restore the lost woody shrub component in perennial drainages
- reduce the risk of future fires
- prevent the spread of invasive and noxious weeds

Emergency action is needed to stabilize burned rangelands and to comply with the Northern Malheur MFP, the Southern Malheur Rangeland Program Summary, and Oregon's Standards for Rangeland Health and Guidelines for Livestock Grazing Management.

The purpose of the Environmental Assessment (EA) is to analyze the proposed activities in the ESR and two other alternatives.

II. RELATIONSHIP TO PLANNING

The Northern Malheur Management Framework Plan (1983) and Southern Malheur Rangeland Program Summary (1984) were reviewed, and it was determined that actions proposed in the Birthday Fire ESR Plan are consistent with the objectives, goals and intent of these Land Use Plans.

III. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Table 1. Summarized treatments by alternative

Action	Proposed Action	No Action	Limited Rehabilitation
Native seeding (acres)	570	0	0
Shrub Planting (acres)	570	0	0
Shrub Aerial Seeding (acres)	570	0	570
Temporary fencing (miles)	3.5	0	3.5

Weed treatment (acres treated) (acres monitored)	570	0	570

A. PROPOSED ACTION

1. REVEGETATION

A combination of aerial and drill planting methods would be used. The native seeding alternative would include seeding approximately 570 acres of public land, as depicted on Map 1, using rangeland drills during the fall of 2002 or spring of 2003. Those areas seeded would include flat and slightly sloped topography which comprises all of the area burned. The native mixture would include cultivars of bluebunch wheatgrass (*Pseudorogneria spicata* - Goldar and Secar cultivars), basin wildrye (*Leymus cinereus*), Lewis flax (*Linum perenne* var. *lewisii*), and fourwing saltbush (*Atriplex canescens*) at a drilling rate of approximately 9 pounds per acre (35 seeds per square foot) (Table 2). All seed when mixed would be treated with organic seed coating to enhance germination success and seedling survival. Seed of brush species would be aerially applied by either helicopter or fixed wing aircraft. The burned area would be aerially seeded, on completion of drilling, with local (preferred) Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) at a rate of 0.1 pounds pure live seed (pls) per acre (approximately 1 pound per acre bulk) and winterfat (*Kraschinnikovia lanata*) at a rate of 2 pounds per acre.

The driving trails created during suppression actions would be drilled concurrent with the rehabilitation seeding since all disturbance was adjacent to or within the area proposed for seeding.

The burned area would be closed to livestock grazing through July 15, 2004 and until monitoring indicates that desired residual perennial vegetation has recovered to levels that are adequate to support and protect upland function and that seeded species have become established.

Monitoring of the burn area would consist of livestock use supervision, vegetation monitoring and weed monitoring (For additional detail, refer below to Part 6. Monitoring). Detected weeds would be controlled utilizing herbicide and mechanical methods in accordance with the EA and Decision Record for the Noxious Weed Control Program 1994-1998 (USDI/BLM 1994).

Table 2. Seed Mixtures

DRILL SEEDING

Seed Mixture 1	
Acres:	570
Timing:	**Oct-Dec**
Species	**Rate (lb/ac)**
Secar bluebunch wheatgrass	3
Goldar bluebunch wheatgrass	3
Magnar basin wildrye	2
Lewis flax	0.25
Fourwing saltbrush	1

Total	9.25

AERIAL SEEDING

Seed Mixture 1	
Acres:	570
Timing:	**Oct-Mar (seed on snow)**
Species	**Rate (lb/ac)**
Big Sagebrush (Wyoming)	0.10
Winterfat	2
Total	2.1

2. STRUCTURES

Temporary Fence

Approximately 3.5 miles of temporary electric fence would be constructed to protect the area to be rested from livestock for the term of the rehabilitation period (See Map Birthday Fire, page 20). Fence construction and removal would be contracted by BLM. The fence will be constructed entirely west of the existing road along a portion to the eastern perimeter of the burned area.

3. LIVESTOCK MANAGEMENT

The burned area would be rested for a minimum of 2 spring growing seasons; it would be closed to livestock grazing for this period. The area would be evaluated in the fall of 2004 to determine when grazing may resume.

ALLOTMENT NAME & NO.	**TREATMENT**			
	Rest	**Drill Seeding**	**Aerial Seeding**	**Seed Mixtures**
[redacted]				
10406	Yes	Yes	Yes	See Table 2

4. NOXIOUS WEED CONTROL

Noxious weed control would consist of surveying to detect the presence and invasion of noxious weeds, to be followed with treatment, then monitoring, and re-treatment if necessary. Any visible sites of halogeton or perennial pepperweed would be mapped and treated during FY2003. If other noxious weed species are detected during the survey/monitoring process, they would also be treated. In FY2004, all sites would be monitored and retreated where necessary.

5. DOZER LINE REHAB

No dozer lines were constructed as part of fire suppression activities.

6. MONITORING

Rangeland Health Monitoring Objectives:

Objective No. 1: To prevent accelerated soil erosion, restore canopy cover and ground cover.

Objective No. 2: Establish seeded species at desired densities.

Monitoring will be conducted for at least three years following the fire to determine objectives have been met.

Monitoring Methods: Sampling sites will be established at existing key areas and at additional sites if needed.

These data will be used to determine when livestock grazing can be resumed on the affected allotment after the two growing season rest period. If the preponderance of evidence indicates the addition rest is needed on the burn, the livestock closure period will be extended. However, since sagebrush is not palatable to livestock, sagebrush density will not be a factor in determining when livestock can reenter the allotment.

Noxious Weeds - Refer to item 4 (Noxious Weed Control), above.

B. ALTERNATIVE 1 – LIMITED REHABILITATION

Rehabilitation efforts would be limited to aerial seeding sagebrush and winterfat only. Areas which could benefit from drill seeding would not be treated. A temporary electric fence would be constructed, and the burned area would be rested from livestock grazing for a minimum of 2 growing seasons.

C. ALTERNATIVE 2 - NO ACTION

Allow the burn area to recover over time without any re-vegetation. No further rehabilitation efforts would occur. No temporary fence would be constructed, and no special grazing management would be established in the area.

D. ALTERNATIVE CONSIDERED BUT NOT ANALYZED IN DETAIL

Herbicide treatment of burned areas with herbicides such as Oust or Plateau to control competition from annual species during germination and establishment of perennial seeded species was considered though not analyzed since use of Oust is not consistent with an injunction on the use of herbicides on public lands in Oregon and Washington and Plateau is not licensed for use in rangeland systems. A summary of treatments analyzed by alternative is presented in table 1.

IV. AFFECTED ENVIRONMENT

1. Upland Vegetation

Native shrub steppe vegetation communities contained predominantly two types prior to the fire. One type, including Wyoming big sagebrush, bluebunch wheatgrass, bottlebrush squirreltail (*Elymus elymoides*) and Sandberg bluegrass (*Poa secunda*), occurred along the summit of the slight ridges in the area . Another type, including greasewood (*Sarcobatus vermiculatus*) and basin wildrye, occurred in the depressions/drainage areas. A small site of winterfat was observed on an unburned inclusion within the main fire perimeter. Patches that may have included annual species only were scattered to the west and throughout the burn. Cheatgrass (*Bromus tectorum*) was dispersed through most vegetation communities with a number of other annual weedy species. Where native perennial herbaceous species were limited or devoid in the understory of sagebrush/ grassland communities, the shrub community provided competition with annual species for available moisture and soil nutrients. Microbiotic crusts are sparsely scattered throughout the area.

2. Special Status Plants

No plants listed or proposed for listing under the Endangered Species Act are known to occur in the immediate or extended area of the fire. Two special status species, sterile milkvetch *(Astragalus sterilis*) and Cusick's chaenactis (*Chaenactis cusickii*), occur within two to 10 miles of the burned area but are not known or suspected to occur at the site.

3. Wildlife and Special Status Animal Species

The proposed treatment area is within yearlong range or winter habitat for a number of wildlife species including mule deer and pronghorn antelope, and other sagebrush dependent species such as loggerhead shrike and meadow larks. Burrowing owls and long-billed curlews are known from the area. There are no wildlife species listed as threatened or endangered under the Endangered Species Act of 1973 in the proposed treatment area. Habitat for the following special status species include ferruginous hawk, collared lizard, leopard lizard, loggerhead shirke and burrowing owls. They and other special status species may have been present in low numbers in the burn area; this habitat is not known to support unusually high concentrations of these species.

4. Water Quality and Riparian/Aquatic Resources

No riparian or aquatic resources are located in the burned area.

5. Soils and Watershed

The soils found in the area of the Mahogany Mountain fire were surveyed and described in Oregon's Long Range Requirements for Water 1969, Appendix I-11, Owyhee Drainage Basin. Unit 56 and Unit 51 occur on 2 to 12 percent slopes. Unit 1 occurs on nearly level geologic areas. Microbiotic crusts have not been inventoried, but are known to exist throughout the burned area.

Unit 56 soils are shallow, well drained with clayey subsoils and cemented pans. They occur on extensive, gently sloping to moderately steep old fans on high terrace remnants. The native vegetation is big sagebrush, low sagebrush, rabbitbrush, budsage, Atriplex spp., needlegrass, and squirreltail grass. Unit 56 soils are used for range with potential for rangeland seeding. This soil makes up approximately 65 percent of the burned area.

Unit 51 soils are deep, somewhat excessively drained soils formed in wind-sorted and reworked lake sediments and alluvium. These soils occur in areas of foliar deposition on the east margins of old dry lakes and stream bottoms. The native vegetation is big sagebrush, rabbitbrush, Indian ricegrass, neeldlegrass, and giant wild ryegrass. These areas have high potential for rangeland seeding. This soil makes up approximately 30 percent of the burned area.

Unit 1 soils consist of deep, well drained, medium-textured soils derived from recent alluvium on nearly level fans and bottomlands. The native vegetation consists mostly of giant wild ryegrass, bluebunch wheatgrass, and big sagebrush. These soils have high potential for rangeland seeding. This unit makes up approximately 5 percent of the burned area.

6. Cultural Resources and Paleontology

Native American Lifeways:

The continued use of the northern Great Basin is can be divided into different chronological periods represented by a different occupational intensity. From 14,000-11,000 B.P. Clovis and Folsum projectile points and a blade and core technology characterizes big game hunters and represents the PaleoIndian period. From 11,000-8,000 B.P., represents the climax of cultural development with the lithic technology characterized by seven different projectile point styles. The diversity in projectile point styles suggests not only an improvement in lithic technology but also experimentation with hafting methods. From 8,000-7,000 B.P., and the eruption of Mt. Mazama at 7070 B.P. , there is a decrease in the use of rock shelters. People appear to be moving from lower elevation lake sites to higher elevation spring sites as the climate becomes hotter and drier. Projectile points are corner-notched and classified typologically as the Lake Mohave, Windust, Norther Side-notched, Humboldt Basal-notched, Elko Eared, Elko Corner-notched, and Pinto Willowleaf. The preferred lithic material for projectile points and lithic artifacts shifts from basalt to obsidian. From 5,000-3,000 B.P., climatic conditions shift to warm and moist conditions characteristic of the Medithermal period. The predominate projectile point style is a slender corner notched point with continued use of the previous styles. In the northern Great Basin, Catlow twine is now an important class of perishable artifact. From 3000 B.P. to 1000 A.D. occupation continues without much change in the northern Great Basin. The archaeological evidence suggests a rather stable cultural environment where changes reflect the relative intensity of certain activities. The final stage of northern Great Basin prehistory, beginning about 1000 A.D., was the occupation of this area by the Numic speaking Northern Paiute. Radiocarbon dates on charcoal samples from Leslie Gulch yielded dates of BC 780 to AD 40 and AD 110 to 410.

With climatic changes, came a shift in floral and faunal species and the appearance of species that characterize arid environments. Overall, the prehistory of the northern Great Basin shows long continuity and adaptive change to distinctive ecosystems with a changing climate. The persistence of lithic and textile traditions and subsistence patters during these chronological periods supports the theory of cultural continuity throughout the northern Great Basin. Settlements of the Northern Paiute were of two types: village and camps. Winter villages of up to fifty huts have been reported, but generally the winter villages consisted of small, unstable groups of about three families located near a major lake or river. Seasonal camps were located wherever there was water and food. Living structures were typically a fence-like windbreak of sagebrush for a temporary or summer camp with a tree or brush sunshade or domed wickiup for both winter and summer use. The subsistence economy of the Northern Paiute was strongly oriented toward the utilization of more than 50 plant species because these provided a more abundant and dependable than fowl, fish or mammals. However, when mammals were available, almost all the parts were utilized. Mammals provided skins, furs, tools and many other by-products of aesthetic and practical value. Insects were often eaten, beetles, grasshoppers, locusts, crickets, ants and caterpillars were consumed, as well as most eggs and larva. These dietary items, which thoroughly disgusted Euro-American observed,

were readily available, storable, high protein foods. In addition, historic documents indicated several hundred plants were used by the Indians of the Great Basin for medicinal purposes, fiber sources and food.

Historic Lifeways

Exploration into this area began with the expeditions of John Jacob Aster, after he heard the stories from the Lewis and Clark Expedition of 1804-1806. The first written observations of southeastern Oregon can be found in journals kept by men involved in the expansion of fir trapping territory. In 1811, Wilson Price Hunt's party crossed the Snake River in the area of the Weiser River. In 1812, Crooks and Robert Stuart were sent east, backtracking the route of their westward journey. They camped opposite the Weiser River on August 13, 1812. Journal excepts show that they had crossed the Malheur and the Owyhee Rivers. Between 1818-1819 Donald McKenzie explored and trapped beaver on the Snake, Malheur and Owyhee Rivers. The Hudson's Bay Company sent Peter Skene Ogden with a company into the area between 1824-1829, and over the course of five expeditions he explored the Snake, Malheur and Owyhee Rivers, and the western side of Malheur County. Between 1830-1832, the John Work party trapped much of the Owyhee, Snake and Malheur Rivers and across the southwestern corner of the county. The year of 1834 marks the first travels of missionaries though Malheur County.

A great push for settlement of the west came in 1849 with the rush of gold seekers to California. It drained settlers from Oregon and diverted traffic from the Oregon Trail. Immigrants crossing Malheur territory on their way west dropped from 1000 in 1848 to 500 in 1849. Ultimately prospectors from California began spreading through the Pacific Northwest in search of new gold claims. Some found gold in southern Oregon in 1850. Small groups of miners ventured east of the Cascades headed for Malheur County in search of the Blue Bucket mine. Eventually gold was discovered on the John Day River and Canyon City sprang up with tents and muslin buildings. By 1864, gold was located in gold-bearing ground just west of Mormon Basin on the high ridge that separated the Burnt River from upper Willow Creek. The Shasta Mining District (Eldorado and Malheur City) was the third settlement in the county. The next mining town was Amelia City, known as New Diggings. Miners kept arriving in Mormon Basin during the winter of 1862-63. Things were beginning to slow down by 1882-1883 when it was reported that a Chinese company and two American companies were washing the gravels. The post office was closed on May 23, 1883, signaling the decline of the placer deposits after 20 years of steady mining. By 1901-02, only the Chinese were left to mine the tailings as the Americans turned their attention to hardrock mining.

With the increase in the number of settlers and miners arriving, as well as traveling through the area, came an increased pressure on the Native American way of life. Conflicts over the available resources arose between miners and settlers and the Native Americans. It was up to the military to protect the settlers and miners. From 1864 to 1867, numerous military maps were made, roads were constructed and posts were established throughout eastern Oregon. The army's function was primarily to protect transport routes to the Owyhee Mines in the vicinity of Silver City, Idaho and to protect civilian settlements.

After the end of General Crook's campaign in 1868, the Indians in southeastern Oregon were subdued and confined to reservations. Some Paiutes accompanied the Fort Hall Bannocks in a brief uprising called the Bannock War of 1878. Much of the action occurred in central and northeastern Oregon, and ended with the defeat of the Indians. It was during the 1880s, that settlers increasingly came to southeast Oregon, and small communities were established near reliable water sources. Most of them were in the northern part of the county and all did not survive. By 1884, sheep had become more profitable than cattle and were moved to market in the east along the same routes that brought settlers to the west. The coming of the railroad also brought a new method of moving livestock to the stockyards. Both cattle and sheep raising prospered during the 1890s. Sheep outfits tended to be small and numerous, while cattle operations were larger and fewer. The Taylor Grazing Act of 1934 along with the Great Depression let to an abrupt and

permanent drop in the number of sheep, while fostering a long-term increase in the number of beef cattle, which has continued to the present.

Within a radius of 5 miles from the Birthday Fire, approximately 15 acres have been surveyed for prehistoric and historic cultural resources. Prehistoric sites in the area reflect the diverse cultural heritage. The use of the area is reflected in the rock art (petroglyphs and pictographs), toolstone quarry sites which offer a wide variety of stone material for use (cherts, mudstones, jaspers, obsidians, quartz, basalts), camping sites, as well as rock alignments and rock cairns used as hunting blinds. The most extensive survey for cultural resources has occurred on Quartz Mountain during the exploration for gold-bearing deposits.

Paleontology

Interest in the fossil flora and faunal resources within Quartz Basin began with survey work conducted by Kittleman and Arnold Shotwell in 1960 and 1961. The Deer Butte formation in this area has yielded Miocene age vertebrates including a variety of shrews and moles, kangaroo rat, mice, beaver, carnivores and hoofed mammals including horse, rhino, antelope, and camel. The fossil flora and fauna found within Quartz Basin is unique in diversity and abundance when compared to other fossil and flora localities in southeastern Oregon.

7. Visual Resource Management (VRM)

Public land within the burned area is a Visual Resource Management Class IV. The objective of VRM Class IV is to provide for management activities that require major modification of the landscape. These management activities may dominate the view and become the focus of viewer attention. However, every effort should be made to minimize the impact of such projects by carefully locating activities, minimizing disturbance, and designing the projects to conform to the characteristic landscape..

8. Recreation

Dispersed outdoor recreation in the proposed fire rehabilitation area consists primarily of off highway vehicle usage and hunting of big game animals. Some dispersed general sightseeing possibly occurs.

9. Livestock Management

Public land within one grazing allotment was burned by the fire. The area burned is a small portion of the Red Butte Winter Range in the Quartz Mountain Allotment (#0406). This 45,511acre pasture is used in winter and early spring from 10/20 to 04/15. One permittee, Johnson Feedlot, is authorized for 7476 AUMS within the allotment, of which 2876 AUMs are authorized in this pasture. The 570 acre burned area would support approximately 40 AUMs. With the construction of the temporary electric fence, approximately 700 acres would be excluded from grazing. The total area to be excluded would support approximately 50 AUMs.

Allotment	Active AUMs	Total Public acres	Public Acres burned
Quartz Mountain #10406	7476	120,319	570

10. Area of Critical Environmental

No areas of critical environmental concern are located in the burned area.

11. Climate/Topography

Birthday Fire occurred in slightly rolling hills within the Quartz Mountain Basin where the elevation above sea level ranges from 3400 feet to 3500 feet. Semi desert shrub steppe vegetation communities result from cold winters and hot dry summers, with strongly alkaline soils in drainages producing salt desert shrub types. The long term average annual precipitation measured at Vale, Oregon (40 miles northeast of the fire boundary) is 9.77 inches (National Oceanic and Atmospheric Administration Climatological Data Annual Summary; Oregon 1999). Precipitation occurs primarily as snow fall during the winter, slight rainfall in spring and fall, with occasional mid-summer thunder storms.

12. Noxious Weeds

The only noxious weed found on site or in the immediate vicinity consists of a small patch of approximately 12 plants of halogeton (*Halogeton glomeratus*), which is also found on roadsides near the burned area. However, perennial pepperweed (*Lepidium latifolium*) is making major inroads in the highly alkaline areas within the general landscape near the burned area. Russian knapweed (*Acroptilon repens)* and jointed goatgrass (*Aegilops cylindrica*) are found at Ferguson Spring, 3 miles to the north of the burned area.

13. Critical Elements of the Human Environment

	Absent/ Unknown	Present, No Impact	Present, Discussed in EA
Air Quality Concerns	X		
Areas of Critical Environmental Concern	X		
Cultural Resources			X
Environmental Justice	X		
Floodplains	X		
Hazardous Substances or Solid Wastes	X		
Native American Religious Concerns	X		
Noxious weeds, Invasive species			X
Prime or Unique Farm Lands	X		
Special Status Species			X
Visual Resources Management			X

Water Quality Concerns			X
Wetlands/Riparian Zones			X
Wild and Scenic Rivers (eligible)	X		
Wilderness Study Areas	X		
Wild Horse Herd Management Areas	X		
Energy and Mineral Resources	X		

V. ENVIRONMENTAL CONSEQUENCES/IMPACTS

A. Proposed Action Alternative

1. Upland Vegetation

Positive benefits would be realized for the vegetative communities on site as native perennial bunchgrasses, forbs, and shrubs would be established in an area with high potential for invasion by exotic species. The newly established native species would compete effectively for nutrients and moisture, helping to prevent large infestations of annual exotics such as cheatgrass, halogeton, and other weeds. With return to higher ecological seral stages, the area would be less vulnerable to invasion by perennial noxious weeds, including Russian knapweed and perennial pepperweed. In addition, overall vegetative diversity would be enhanced in the area with the establishment of a variety of vegetative life forms.

Livestock rest in the burned area would allow existing perennial vegetation an opportunity to quickly recover without additional stress due to forage removal in early spring. The minimum rest period of two spring growing seasons is BLM policy and in accordance with national fire rehabilitation guidance. Typically, two growing seasons rest in areas where vegetative recovery is expected to be good is adequate. However, additional rest may be required if climatic conditions during the next few growing seasons are unfavorable for vegetative establishment. Drilling perennial bunch grasses is expected to stabilize the disturbed sites quicker when compared to relying on natural re-vegetation methods. Drilling and broadcast seeding would also increase plant community structure and biological diversity, and decrease the likelihood for invasion of cheatgrass and noxious weeds into these disturbed sites. Drilling and broadcast seeding would be expected to minimally disturb existing bunchgrasses and microbiotic crusts.

Exclusion of grazing would eliminate any grazing impacts in the burned area; seeded species would establish without grazing disturbance. However, there would be no reduction in AUMs in the Red Butte Winter Range. Due to the size of this pasture and the winter/early spring season of grazing, there should be no impacts to health and vigor of native grass species with the displacement of 50 AUMs to the unburned area.

Drill seeding would create some short term impacts to the remaining vegetation and to the soil surface. However, the long term benefits from reestablishing perennial vegetation would quickly out weigh these short term disturbances. The disturbances caused by rangeland drill disk indentations vary, depending largely upon soil moisture and soil texture. Disturbance on moist soils is much less than on dry soils. The disks also dig deeper into coarser textured sandy soils thereby creating more disturbance than would occur on finer textured loamy soils. These impacts can expose the roots of shallow rooted grass particularly Sandberg bluegrass, resulting in the loss of some of these individuals. In other cases however, dense stands of Sandberg bluegrass can prevent the disks from penetrating into the soil. Again this is also influenced by soil moisture and soil texture. It is anticipated that some (less than 10%) Sandberg bluegrass individuals could be lost to drilling. Deeper rooted perennials grasses such as bluebunch wheatgrass are less likely to be impacted by the disks.

2. Special Status Plants

No special status plant species are known to occur on site and therefore would not be directly impacted. However, impacts to sites near the burn area may be beneficial if native species are established and help reduce rapid invasion of noxious weeds.

3. Wildlife and Special Status Animal Species

The key wildlife habitats that were affected by the fire are sagebrush steppe and salt desert shrub types. Sagebrush provides important structure for nesting neotropical migratory birds and hiding cover for most wildlife and special status species. Reseeding of sagebrush will help speed the recovery of these critical habitat elements, although this small area may recolonize with shrub species fairly quickly. Most species that use the sagebrush steppe and salt desert shrub communities will benefit from seeding sagebrush and winterfat, although burrowing owls and long-billed curlews prefer open and/or degraded rangeland conditions. However, habitat conditions beyond the burned area should provide many acres of habitat suitable to the needs of these two species.

Seeding grass of native species would improve habitat for wildlife compared to allowing cheatgrass to dominate. Tall bunch grasses would provide structure and cover for nesting birds and other wildlife, as well as provide competition to help reduce cheatgrass invasion.

4. Water Quality and Riparian/Aquatic Resources

Without onsite riparian/aquatic resources, no direct impacts would accrue to these resources. Water quality and off-site riparian/aquatic resources may benefit as soils are stabilized and hydrologic functioning is returned to the site with successful reseeding of native vegetation. The risk of upland rilling and gullying which may lead to eventual down gradient gully migration into stream channels, causing the potential loss of off-site riparian resources, would be greatly reduced with successful establishment of native perennial species.

5. Soils and Watershed

Overall, the Proposed Action would be positive on the health of these lands and with the success of the seedings surpass the prefire conditions for soil stability, hydrologic function, and nutrient cycling.

Under the Proposed Action, 570 acres would be drill seeded using standard rangeland drilling methods and one seed mix. This operation results in a short-term impact to the soil resource in the form of

mechanical soil disturbance while staging the operation and during the drilling process. The drilling process can disturb and loosen surface soil particles, increasing the erosion potential from both water and/or wind. There can also be disturbance (fragmentation) to biological soil crusts during drilling. These impacts would be present immediately following the drilling operation and continue into the following growing season. As the existing vegetation starts regrowth and the seeded species began to establish, the soil/watershed conditions would improve. Depending on the success of the seedings, the health of the watershed could improve to levels that exceed the prefire conditions.

The minimal two growing season of rest from livestock grazing will allow the vegetative community time to reestablish and the seeded species time for growth and establishment. Litter from these plants will also be produced to aid in soil protection and nutrient cycles. The mechanical disturbance to the soil surface from livestock hoof action will also be prevented during this period. This will aid in reducing the mechanical damage to the soil surface along with over utilization of key forage species in these areas. The proposed action would reduce the potential of water or wind to increase erosion over the burnt area.

Seeding of desirable perennial species results in greater productivity and site stability in the long term. Where there is a reduction in single-species dominance, especially annual species, soil erosion rates would tend to decrease following recovery of perennial vegetation communities. Seeding following soil disturbing activities associated with wildfire, fire suppression, and emergency fire rehabilitation would limit the introduction and competition of weedy and undesirable species. Areas in poor condition prior to burning would stabilize more slowly, leaving soils vulnerable to erosive rainfall for longer periods.

Because there is also the potential for depletion of soil nutrients and negative effects to microbiotic crusts that might occur from increased erosion left unchecked, the proposed action would increase the potential for nutrient and microbiotic recovery under native vegetation conditions. Both resources are negatively impacted under weedy, nonnative annual vegetation.

Construction of a temporary electric fence would create a minimal localized disturbance to soils. Once this action is complete, its aid in managing livestock in the areas will have lasting positive results because seeded species will establish more quickly in the absence of livestock grazing.

The aerial seeding of shrubs, another action that would be taken as part of this proposal, would have some benefit to the soil/watershed resource as these species would become established, providing a canopy to intercept rainfall and contribute litter to the soil surface.

6. Cultural Resources and Paleontology

Prior to the ground disturbing aspects of the rehab, a Class III cultural resources inventory will be conducted.

Surveys of fossil flora and faunal resources will be conducted in conjuction with cultural resource surveys. Identified fossil localities will be flagged and excluded from the project area.

7. Visual Resource Management

This alternative would have a positive impact on visual resources over the long term. Anticipated improvements in vegetative cover and diversity would enhance scenic quality and result in mor primitive and natural appearing landscapes. Over the short term, there would be a slightly negative impact on visual resources due to the construction of a temporary fence and potential drill row visibility from seeding actions.

8. Recreation

There would be some positive impact to recreational values under this alternative. If the seedings are successful, improvements in scenic quality due to improved vegetative condition would positively affect recreationists' experiences. Improved habitat conditions for wildlife would lead to improved opportunities for nature study, wildlife viewing, and hunting.

9. Livestock Management

Livestock would be excluded from the burned area for at least two growing seasons. Approximately 50 AUMS, which would not be available annually as a result of constructing a temporary electric fence around the burned area, are identified below:

Allotment	Public acres burned and excluded from grazing	AUMs not available	% of active AUMs
Quartz Mountain #10406	700	50	0.5

Because the large pasture is grazing in winter and early spring when grazing impacts to vegetation are less severe than in late spring, no reduction in AUMS would be necessary as a result of this wildfire. The livestock permittee would be required to maintain the temporary fence when livestock are in the area adjacent to the fence, increasing operational costs to that permittee. In the long term, positive benefits would accrue to the livestock operator due to the establishment of perennial vegetation and reduction of potential for invasion by noxious weeds.

10. Noxious Weeds

Establishment of perennial species would help prevent the spread and takeover by noxious weeds such as halogeton and perennial pepperweed, and whitetop. Establishment of a diverse shrub component would more fully occupy the soil profile with roots of desirable perennial species as compared to shallow rooted perennial grasses and forbs alone. Full occupation of the soil profile with roots of desirable species would provide additional competition to reduce dominance by deep rooted weedy species. Establishment of diverse perennial vegetation communities including grasses, forbs and shrubs would help prevent or minimize the proliferation and invasion of noxious weed species within the burned area and adjacent to the road impacted by suppression actions. A reduction in the occurrence of weeds adjacent to roads would limit transport of seed to new sites within the burn area and offsite.

CUMULATIVE IMPACTS OF THE PROPOSED ACTION

Cumulative effects are the environmental impacts resulting from the incremental impacts of a proposed action when added to other past, present, and reasonably foreseeable future actions, both Federal and non-Federal. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

The pre-fire condition of the burned area is a result of past wildfire, wildlife use, livestock use, and road construction. The proposed seedings will improve overall watershed condition by providing those species with root structure more capable of stabilizing soil. The seedings will also add to the vegetative species diversity and resultant wildlife species diversity. In addition, these seeded species will aid in enhancing hydrologic function of the soil resources. Improved range condition, and therefore, hydrologic function, will result in less runoff, less sedimentation and a reduced risk of rill and gully formation from

post-fire runoff producing events. Temporary loss of forage for two years after the fire will be offset by improved species diversity and vigor provided by the seeded species.

B. ALTERNATIVE 1 – LIMITED REHABILITATION

1. Upland Vegetation

This alternative would allow sagebrush and winterfat reestablishment from aerial seedings but would not necessarily facilitate the reestablish of perennial grasses in the burned area. Resting from livestock grazing for two years' growing seasons would allow some recovery of the pre-existing perennial species. Because much of the pre-fire communities were dominated by invasive annual species, and even with the sagebrush seeding, a high potential for cheatgrass invasion would exist. As discussed under the environmental consequences for the No Action alternative, the area would still have a high risk of becoming dominated by an annual grass understory which would reburn in the near future. Many established sagebrush plants have been killed by the fire, and the area may begin to revert to an exotic annual grass monoculture.

2. Special Status Plants

No special status plant species are known in the project area and would not be affected. However, species near the project may be invaded by noxious weed species should they spread from rapid invasions into an untreated burned area.

3. Wildlife and Special Status Animal Species

By seeding sagebrush, the area would more quickly return to a shrub cover that would provide habitat for sagebrush-dependent species. By not seeding taller bunchgrasses, those areas would be left with only short grass. Only a few species would use them, such as horned larks, meadow larks, burrowing owls, long-billed curlews, and some small rodents such as deer mice.

4. Water Quality and Riparian/Aquatic Resources

The condition of upland watersheds affects how water is captured, stored and safely released downslope. By not improving the uplands by drill seeding and planting, short and long term sedimentation rates would be elevated above pre-fire conditions, although establishment of shrubs through aerial seeding may mitigate losses to a degree. A risk of upland rilling and gullying may lead to eventual down gradient gully migration into stream channels, causing the potential loss of off-site riparian resources.

5. Soils and Watershed

Overall, this alternative would be somewhat positive on the health of these lands, depending on the success of the existing vegetation to reestablish in a timely manner.

The minimal two growing season of rest from livestock will allow the vegetative community time to reestablish. Litter from these plants will also be produced to aid in soil protection and nutrient cycles. The mechanical disturbance to the soil surface from livestock hoof action will also be prevented during this period.

Construction of the temporary electric fence would create a minimal localized disturbance to soils. Once this action is completed, its aid in managing livestock in the area will have lasting positive results due to protection of the soil surface from livestock impacts during the post-fire recovery period.

6. Cultural Resources and Paleontology

A Class III cultural inventory will be conducted before ground disturbing activities commence for fence construction. Aerially seeding sagebrush would return some protective visual cover to the burned area in a few years, compared to the 20 + years that would be required for significant shrub reestablishment with natural regeneration.

Paleontology

Surveys of fossil flora and faunal resources will be conducted in conjuction with cultural resource surveys. Identified fossil localities will be flagged and excluded from the project

7. Visual Resource Management

This alternative would have a positive impact on visual resources over the long term, but less positive impact than with the proposed action. Anticipated improvements in vegetative cover and diversity would enhance scenic quality and result in more primitive and natural appearing landscapes. Over the short term, there would be a slightly negative impact on visual resources due to the construction of temporary fences.

8. Recreation

There would be some positive impact to recreational values under this alternative, but less positive impact than with the proposed action. If the seedings are successful, improvements in scenic quality due to improved vegetative condition would positively affect recreationists' experiences. Improved habitat conditions for wildlife would lead to improved opportunities for nature study, wildlife viewing, hunting, and fishing. Over the short term, recreational travel would be made slightly more difficult due to the construction of temporary fences.

9. Livestock Management

Not drill seeding perennial grasses in the burn would allow the burn to become dominated with cheatgrass and medusa head which would reduce the forage base for livestock. Although cheatgrass is palatable to livestock, it does not remain palatable for as long as perennial grasses do. Furthermore, it's forage production is highly variable and does not produce the dependable forage that the deep rooted perennial plants produce. Medusa is not very palatable to livestock.

10. Noxious Weeds

Weeds left untreated/detected pose a greater possibility of spread to previously non-invaded areas. Based on the discussion in the Upland Vegetation section above, this alternative may allow sagebrush reestablishment from aerial seedings but would not reestablish perennial grasses in the burned area. In the absence of competition from desirable, perennial vegetation, the entire burn would be highly susceptible to domination by noxious weeds found in and adjacent to the site. Livestock production and wildlife habitat may be further negatively impacted in the long term if noxious weed species increase in the burn area, further reducing forage production.

CUMULATIVE IMPACTS OF ALTERNATIVE 1

Long term cumulative impacts from sagebrush seeding would provide one component of healthy range sites. However, by not seeding perennial grasses, the site will be susceptible to annual grass invasion and subsequent frequent re-burns and loss of the seeded sagebrush. Potential short and long term impacts of Alternative 1 would be similar to the No Action Alternative.

C. ALTERNATIVE 2 - NO ACTION

1. Upland Vegetation

The No Action alternative would result in no short term impacts caused by drilling as in the proposed action. However, it would allow cheatgrass to occupy the bare ground, with a high risk to permanently dominate the burned area. Because this species thrives in this type of environment, the area could cross a threshold into a fire-dependent annual-dominated community. The short fire frequency associated with an annual-dominated community would permanently prevent the site from returning to its preburn conditions. In addition to the increased fire hazards, an annual-dominated community would provide poor wildlife habitat, would make the site more susceptible to noxious weeds, and would provide few other values associated with diverse plant communities.

2. Special Status Plants

Nearby special status plants and their habitats would be at a greater risk to exotic weed invasions if the pre-fire perennial plant communities do not outcompete these species.

3. Wildlife and Special Status Animal Species

With no reseeding of sagebrush, fourwing saltbrush, or winterfat, the somewhat slow return of these shrub species to the area would reduce the area's ability to provide suitable shrub habitat for wildlife species, particularly those that are sagebrush-dependent, in a timely manner. However, burrowing owls and long-billed curlews may find the open areas more suitable for nesting and foraging habitat Sagebrush would be expected to return to the site fairly quickly due to presence of sagebrush in the immediate vicinity of the burn.

With no reseeding of the taller bunchgrasses, the proposed seeding areas would have no or very few taller grasses to provide cover for wildlife. Additionally, they would be more vulnerable to cheatgrass invasion, which would increase the likelihood of future fires, further reducing the possibility of the area eventually providing habitat for sagebrush-dependent species.

4. Water Quality and Riparian/Aquatic Resources

The condition of upland watersheds affects how water is captured, stored and safely released downslope. By not improving the uplands by seeding and planting, short and long term sedimentation rates will be elevated above pre-fire conditions. A high risk of upland rilling and gullying may lead to eventual down gradient gully migration into stream channels, causing the potential loss of off-site riparian resources.

5. Soils and Watershed

Overall, this alternative would be negative to various degrees on the health of these lands, depending on the choices the livestock operator makes and the success of the existing vegetation to reestablish in a timely manner. Although there would be no short term soil erosion impacts due to seeding, there would still be short term erosion due to the lack of vegetative cover on the soil surface in the burn. Failure to

treat sites after fire can result in irreversible dominance by annual species (such as cheatgrass). The fire-return interval for this area is higher than natural and will continually burn with undesirable annual plant invasion. This rate of return increases the potential for soil erosion, soil nutrient loss, and the effects to and loss of microbiotic crust. Without rehabilitation the dominance of weedy, annual species could surpass the prefire conditions thereby decreasing soil stability, hydrologic function, and nutrient cycling.

Under this alternative no management actions would be implemented, and grazing the area would be up to the discretion of the livestock operator. Grazing the area by livestock before the area fully recovers vegetatively would adversely affect both the short-term and long-term health of these rangelands.

6. Cultural Resources and Paleontology

Cultural resources exposed by fire would be visible for unauthorized collecting until vegetation recovers. Potential conversion to annual grasses would compromise the integrity of cultural sites and artifacts.

Paleontology

The management of fossil localities would continue as at present, unidentified localities are subject to vandalism through lack of monitoring of identified locations.

7. Visual Resource Management

This alternative would have a negative impact on visual resource management. Scenic quality would deteriorate if there was significant erosion or increased domination of the plant community by invasive weed species.

8. Recreation

This alternative would have negative impacts to recreation. Deteriorated habitat conditions would have a negative affect on nature study and wildlife-related recreation.

9. Livestock Management

Not reducing livestock use in the burned area would benefit the affected livestock permittees in the short term by not having to reducing their grazing use. However, not reducing livestock use would have long term impacts for the permittees. Livestock would concentrate their use on the succulent new regrowth on the burned perennial grasses in the burn resulting in heavy use. The impacts of the burn following by heavy use would impact these species, causing decreases in vigor, mortality, and decreased forage production.

Not drill seeding perennial grasses in the burn would allow the burn to become dominated with cheatgrass and medusa head which would reduce the forage base for livestock. Although cheatgrass is palatable to livestock, it does not remain palatable for as long as perennial grasses do. Furthermore, it's forage production is highly variable and does not produce the dependable forage that the deep rooted perennial plants produce. Medusa is not very palatable to livestock.

10. Noxious Weeds

Weeds left untreated and/or undetected pose a greater possibility of spread to previously non-invaded areas. In the absence of competition from desirable, perennial vegetation, the burned area would be highly susceptible to domination by noxious weeds found in and adjacent to the site. Livestock production and wildlife habitat may be further negatively impacted in the long term if noxious weed species increase in the burn area.

CUMULATIVE IMPACTS OF THE NO ACTION ALTERNATIVE

Long term cumulative impacts are related to the ability of the watershed to recover from the burn. The rate of recovery will depend on the ability of the native plant communities to outcompete cheatgrass and medusahead. Past experience with rangeland fire in eastern Oregon has shown the aggressive nature of cheatgrass to dominate these range sites following fire if left untreated. Potential short and long term impacts of the No Action alternative include:

- loss of habitat diversity to invasive annual species and noxious weeds
- degradation of watershed stability and riparian function
- loss of forage for wildlife and livestock
- loss of recreational opportunities associated with wildlife, scenic and aesthetic quality
- threats to the integrity of cultural sites and artifacts

VI. CONSULTATION AND COORDINATION

(Name, Agency, Title of Individual)

Johnson Feedlot - Grazing Permittee
Western Watersheds - Interested Public
Hal Shepard - Interested Public
Malheur County Court
Oregon Department of Fish and Wildlife
Oregon State Historical Preservation Officer
Burns Paiute Tribe
Confederated Tribes of Umatilla

VII. ENVIRONMENTAL ASSESSMENT DECISION REPORT (Decision Record/Rationale)

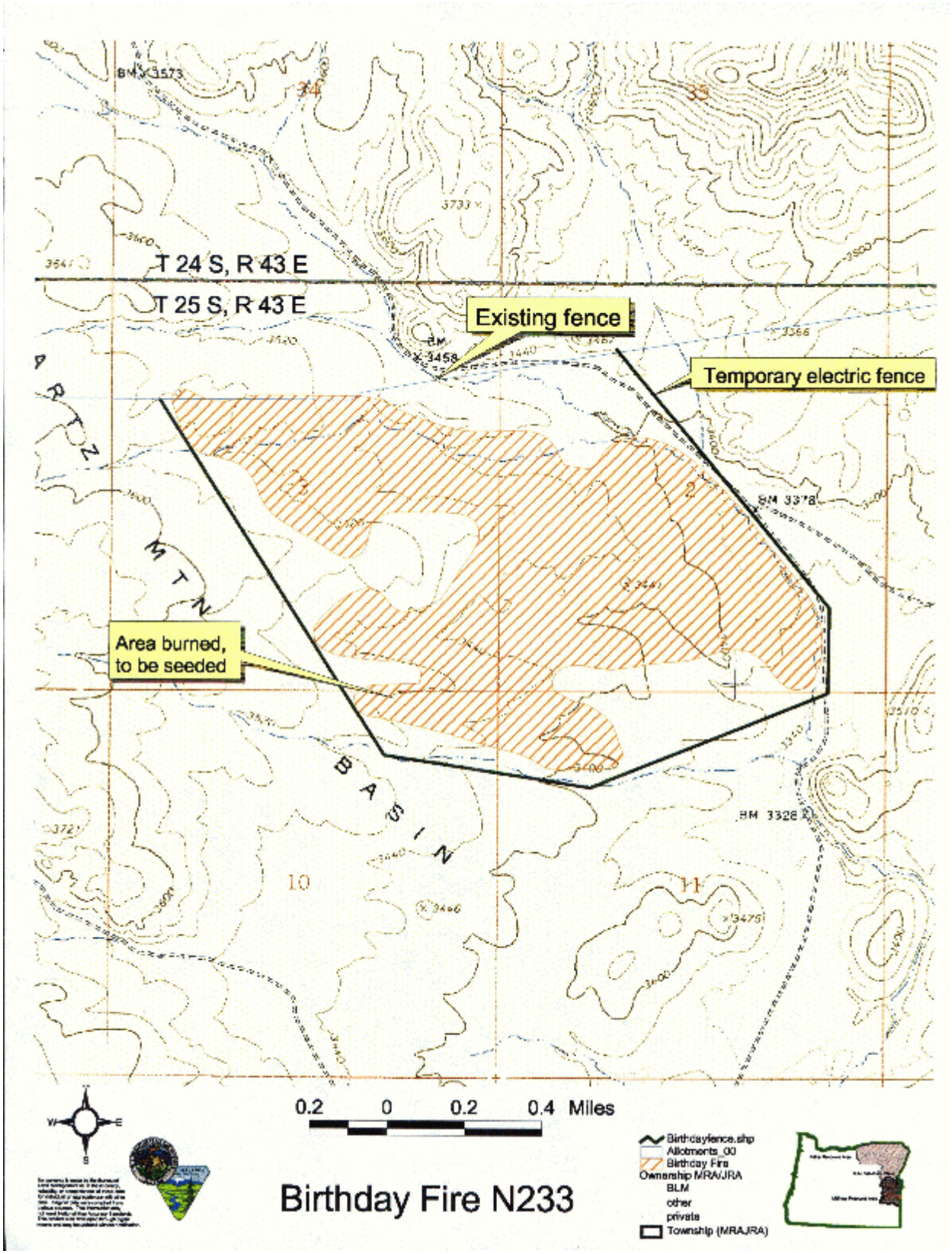
See page 2.

VIII. LIST OF PREPARERS/REVIEWERS

Team Leader	Jean Findley
Operations	Dave Evans
NEPA Compliance & Planning	Randy Eyre
Hydrology & Soils	Shaney Rockefeller
Cultural Resources/Archaeologist	Diane Pritchard
Rangeland Mgt. Specialist	Steve Christensen
Wildlife Biologists	Al Bammann/Bill Olson
GIS Specialist	Brent Grasty
Botanist	Jean Findley
Outdoor Recreation Planner	Bob Alward
Weeds	Lynne Silva

IX. MAP

Fire Perimeter and Unburned Islands of Vegetation over 40 acres
Colored Land Status Map
Protective Fence
Seeding or Seedling Treatment areas


T 24 S, R 43 E
T 25 S, R 43 E
Existing fence
Temporary electric fence
Area burned, to be seeded
BM 3573
BM 3458
BM 3378
BM 3328
34
35
10
11
0.2 0 0.2 0.4 Miles
Birthday Fire N233
Birthdayfence.shp
Allotments_00
Birthday Fire
Ownership MRA/JRA
BLM
other
private
Township (MRAJRA)